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GREAT GRAY OWL HABITAT SURVEY STANISLAUS NATIONAL FOREST, 1982

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GREAT GRAY OWL HABITAT SURVEY

STANISLAUS NATIONAL FOREST[1]

1982

by

JON WINTER

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[1]Supported by the U.S. Forest Service, Region 5, Stanislaus National Forest Contract #53-2-37. Final Report (November 1982).

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INTRODUCTION

The following report is an assessment of Great Gray Owl (Strix nebulosa) habitats within the Stanislaus National Forest, Region 5, and contains a summary of owl searches, time spent, and habitat evaluations of 25 meadow systems that were visited between 15 July and 2 September 1982. These evaluations give a quantitative rating of the habitats in an attempt to simplify management considerations. These assessment ratings should be considered preliminary and subject to change as our understanding of Great Gray Owl habitat requirements become more refined. During the course of this study no Great Gray Owls were found in any of the meadow systems inventoried. This result reinforces my contention (Winter 1980) that the species is truly rare in California, and not an artifact of our inability to find it.

METHODS AND MATERIALS

Meadow vegetation was assessed by using toe-point transects. The transects were begun at the head of the meadow at a randomly selected starting point. At every fifth pace the vegetation was determined in a 3/4 inch (1.9 cm) diameter circle tangent to the toe of my boot. (For the types of vegetation assessed, see Appendix A.) A minimum of 200 toe-points were tallied in each meadow smaller than 20 acres (8 ha). In meadows larger than 20 acres, a maximum of 600 toe-points were tallied. At every fifth toe-point (every 25th pace) a small mammal plot was established. The mammal plots were 5.9 feet (1.8 m) in diameter (1/400 acre) and in each plot the number of fresh pocket gopher mounds and active Microtus runways were tallied. These plots were used to determine the relative numbers of pocket gophers and microtines (see Winter 1982) in the meadow expressed as a percentage of the Microtus and pocket gopher sign found in each plot. Ten snag plots were randomly selected around the perimeter of each meadow. Each plot was 71.4 feet (21.7 m) (1/10 acre) in diameter and was located within 600 feet (183 m) of the meadow edge. All snags greater than 10 inch (25 cm) DBH were tallied. Canopy closure was also estimated. Additional information recorded were: slope of the meadow, slope of the stream channel, grazing, recreational use, drainage basin area, presence of gullies, elevation of the meadow, soil condition, and aspect. Wildlife observations (including wildlife sign) were recorded and limited to animals actually using the meadow or the 600 foot perimeter around the meadow. Great Gray Owl calling was done over at least two different nights. Taped owl calls were used. The edges of each meadow were checked for additional signs such as pellets, molted feathers, etc. Each meadow was photographed from the meadow head and for each 200 points of the vegetation transects a photo across the transect was taken. Four factors were selected in the habitat scoring: (1) the density of snags per acre, (2) the size of the meadow, (3) the presence of grazing, and (4) the area of the meadow covered by non-grass/forb vegetation. The scores assigned to each category are listed below.

Snags > 24 Inch DBH/Acre		Score	Meadow Size		Score
>4 snags/acre	=	12	> 25 acres	=	12
3-4 snags/acre	=	8	20-25 acres	=	8
1-2 snags/acre	=	4	14-19 acres	=	4
<1 snag/acre	=	0	< 14 acres	=	0

Grazing		Score
No Grazing	=	12
Grazing with grass > 12 inches in late summer	=	3
Grazing with grass < 12 inches in late summer	=	4

Meadow Area Covered By Non-grass/Forb Vegetation (%)

<10%	=	12
>10% < 20%	=	8
>20% < 30%	=	4
>30%	=	0

If a particular score fell in between one of the scoring categories, the value was rounded-off to conform with the next higher or lower scoring level.

The maximum score that a meadow can receive under this system is 48 points. I would consider any meadow with a score of between 42-48 as excellent Great Gray Owl habitat.

Table 1 is a summary of the survey, the numbers and species of owls found, and habitat scores of each meadow surveyed. Six species of owls were found of 17 individuals in a total of 830 acres of meadow habitat surveyed. The average habitat score was 30.4 (S.D.=7.7) with a range of 20-48. A total of 123.5 hours were spent calling owls on the project.

RESULTS AND DISCUSSION

Meadow Name: Bourland Meadow
District: Mi-wok
Date of Survey: 24 Aug 1982
Calling Effort: (8/23) 19:00-22:00, (8/24) 19:09-22:30
Weather: Partly cloudy, no wind, moon 1/2 full.
Results: No owls heard here.
Habitat Assessment: I consider this meadow system to be one of the best Great Gray Owl habitats found on this survey. It is large enough to support breeding, and the snag count is excellent. The condition of the meadow is also excellent. Although livestock are normally fenced out, I did see seven cattle in the meadow. There must have been a break in the drift fence. There are a number of areas around the edge of the meadow that are well drained and would provide good habitat for pocket gophers. The wetter parts of the meadow provides excellent Microtus habitat. Disturbance from recreationists is minimal. Although no owls were heard here, the survey was done late in the season and if birds were present they could have engaged in post-breeding dispersal and were absent at the time of the survey (see Winter 1982).
Habitat Score: 43

Meadow Name: Clavey Meadow
District: Mi-wok
Date of Survey: 5 Aug 1982
Calling Effort: (8/4/) 19:00-22:00, (8/5/) 18:30-22:30
Weather: Clear, calm, warm, with full moon.
Results: Great Horned Owl heard at 20:45 and 22:00 on 8/4 and at 20:32 on 8/5. No other owls heard.
Habitat Assessment: This meadow is rather small for Great Gray Owls with 20% of the vegetation composed of Corn Lilies and willows. There are a few aspens and cottonwoods along the stream. The Microtus habitat is limited here, but pocket gophers seem fairly abundant. I counted 14 horses grazing in the meadow. Recreation disturbance is probably limited since the meadow is privately owned. As Great Gray Owl habitat it is marginal at best.
Habitat Score: 24

Meadow Name: Hess Meadow
District: Mi-wok
Date of Survey: 28 July 1982
Calling Effort: (7/27) 18:06-22:06, (7/28) 20:00-22:30
Weather: Clear, warm, moon about 40 degrees above the horizon.
Results: Pygmy Owl calling at 20:44 (7/27) and a Screech Owl calling at 20:58 (7/28). No other owls heard.
Habitat Assessment: This meadow is probably a little low in elevation (3520 ft.) for Great Gray Owls. The heat stress during the summer months is considerable at these elevations. The meadow is large enough to support a pair, but it is actively grazed all summer. I counted 18 head of cattle during my visit here. Pocket gopher abundance seemed good, but the snag count is very low. As Great Gray Owl habitat this meadow would probably be of interest only to a transient bird.
Habitat Score: 32

Meadow Name: Lee Price
District: Mi-wok
Date of Survey: 6 & 8 Aug 1982
Calling Effort: (8/6) 18:30-22:30, (8/9) 18:00-22:00
Weather: Overcast, warm and humid, no wind.
Results: I flushed a small owl from the trees near the corral at 20:49 (8/9) but could not identify it. Judging by its size I would guess that it was a Long-eared Owl.
Habitat Assessment: Large areas of this meadow are devoid of vegetation and the soil is loose and sandy. The area seems poor for Microtus, but pocket gophers were common enough. I found several indian grinding stones in the south end of the meadow. There are a couple of springs that surface in the south half of the meadow that tend to keep it green. The area seems poor for Microtus. There are several areas around the perimeter where small trees have been cut away to retard the succession of the meadow. The area is well used by deer. The snag count is low, but the area should be given some consideration as Great Gray Owl habitat.
Habitat Score: 36

Meadow Name: Rushing Meadow
District: Mi-wok
Date of Survey: 23 & 29 July 1982
Calling Effort: (7/23) 20:20-22:30, (7/79) 20:00-23:30
Weather: (7/23) Calm, overcast, no wind, humid and warm, (7/29) Clear, no wind, moon half-full 33 degrees above the horizon.
Results: A Long-eared Owl was calling in the upper meadow at 21:43.
Habitat Assessment: The upper meadow is in good condition with the grass rather deep in many places. The lower meadow is overgrazed and the habitat is largely unsuitable for Microtus. The pocket gopher count was fairly high, however. The meadows are privately owned, for the most part, and there is heavy recreationist use of the area. The habitat is marginal for Great Gray Owls.
Habitat Score: 32

Meadow Name: Thompson Meadow
District: Mi-wok
Date of Survey: 21 July 1982
Calling Effort: (7/21) 18:11-22:24, (7/22) 19:30-22:40
Weather: Calm, clear, no moon, warm.
Results: No owls heard.
Habitat Assessment: This meadow is in rather good condition. Cattle are fenced out. The size of the meadow is marginal for supporting Great Gray Owls and the snag count is not very high. There has been a good deal of cutting around the perimeter. The meadow could be given consideration as Great Gray Owl habitat, however.
Habitat Score: 36

Meadow Name: Big Meadow Creek
District: Calaveras
Date of Survey: 16 Aug 1982
Calling Effort: (8/16) 19:00-22:00, (8/17) 19:30-22:30
Weather: Clear, no wind.
Results: No owls heard, but a Great Horned Owl contour feather and a wing feather that might have come from a Long-eared Owl were found in the meadow.
Habitat Assessment: The habitat in this meadow is not suitable for Great Gray Owls. There is very little grass in this meadow and nearly 34% of the area is Corn Lilies and Mule Ears, a plant association avoided by Great Gray Owls. There are a number of large Red Fir snags around the meadow, some of which reached 6 feet DBH. I also noted several hunter's camps in the area. Most of this area is in private ownership.
Habitat Score: 20

Meadow Name: Gabbot Meadow
District: Calaveras
Date of Survey: 2 Sept 1982
Calling Effort: (9/1) 19:45-22:45, (9/2) 19:45-22:45.
Weather: Clear (30% cloud cover) no wind, full moon.
Results: Pygmy Owl calling in the NE side of the meadow at 05:50 on 9/2.
Habitat Assessment: The substrate in this meadow is rather porous and grass accounts for less than 50% of the ground cover. Habitat seems poor for Microtus. The stream is lined with impressive stands of Black Cottonwood and Aspen. There is a good deal of hiker and backpacker use of the area, including motorcycle campers. The snag count is unusually high and there is Great Gray Owl nesting potential for the area, but the ability of the substrate to support a viable prey base is questionable.
Habitat Score: 36

Meadow Name: Gardner Meadow
District: Calaveras
Date of Survey: 19 Aug 1982
Calling Effort: (8/18 19:00-22:00, (8/19)-22:00.
Weather: Clear, no wind.
Results: No owls heard.
Habitat Assessment: This meadow is too small to support Great Gray Owl breeding activity. I noted marked trees right up to the edge of the meadow, which is a rather poor timber practice. There is a lot of dead and downed timber that should be taken out. It could be used for firewood and hauled out in the fall when the meadow substrate would tolerate the trucks. There are a lot of slash piles around the edge that should be burned to allow the grass to regenerate in the spring. About 15 head of cattle were observed grazing the meadow. The inventory data states the meadow is 18 acres, but it looks more like 12-14 acres.
Habitat Score: 28

Meadow Name: Stanislaus Meadow
District: Calaveras
Date of Survey: 28 Aug 1982
Calling Effort: (8/27) 18:30-22:30, (8/28) 19:00-22:30
Weather: Calm, partly cloudy to overcast, no wind, moon about half full.
Results: Two Great Horned Owls were heard calling on the west side of the meadow at 05:28 on 8/28.
Habitat Assessment: This meadow has excellent possibilities for Great Gray Owls. The snag count is more than adequate and grazing is limited to horses using a small part of the meadow. A few cattle graze the extreme NE end of the meadow. The meadow itself is in good condition. There are several areas around the edge of the meadow where sapling Lodgepole Pines have been cut and stacked. I assume this is an attempt to retard the succession of the meadow. The area does receive heavy recreationist use in the summer and fall. There are a large number of hunters that use the area during hunting season. The meadow is large enough to support a breeding pair of Great Gray Owls.
Habitat Score: 48

Meadow Name: Lower Bell Meadow
District: Summit
Date of Survey: 2 Aug 1982
Calling Effort: 19:07-20:40
Weather: Clear, no wind, moon nearly full.
Results: No owls heard.
Habitat Assessment: This meadow is too small to support breeding Great Gray Owls. It is rather heavily grazed. I noted 28 head of cattle in the meadow during this visit. The meadow is only 17 acres in area, and about 13% of the ground cover is Corn Lily which further reduces the desirability of the meadow for Great Gray Owls. The snag density is also rather low.
Habitat Score: 28

Meadow Name: Main Bell Meadow
District: Summit
Date of Survey: 30 July and 2 Aug 1982
Calling Effort: (8/3) 20:30-22:00
Weather: Clear, no wind.
Results: No owls heard.
Habitat Assessment: This meadow has only fair potential for Great Gray Owl utilization. It is probably too small to support a breeding pair and the visitor impact is rather heavy. The area might be of interest to owls dispersing up or down slope. There are several large clumps of willow in the meadow that could provide good habitat for Willow Flycatchers (Empidonax traillii).
Habitat Score: 28

Meadow Name: Middle Bell Meadow
District: Summit
Date of Survey: 2 Aug 1982
Calling Effort: (8/2) 20:40-23:00
Weather: No wind, moon nearly full, warm.
Results: One Great Horned Owl calling on the south side of the meadow at 20:40.
Habitat Assessment: This meadow is in good condition. Cattle are fenced out most of the season. The snag count was low for nesting habitat and the meadow is at the lower limit in area large enough to support breeding. However, if taken collectively, Lower, Main and Middle Bell Meadows could be considered reasonably good Great Gray Owl habitat. The three meadows are close enough together so that a single pair could easily hunt all three. Collectively they total 57 acres which is large enough to support a breeding effort. The nesting potential of these three meadows could be improved with man-made nest sites.
Habitat Score: 32

Habitat Score: Main, Middle, and Lower Bell Meadows: 36

Meadow Name: Upper Bell Meadow
District: Summit
Date of Survey: 3 Aug 1982
Calling Effort: (8/3) 13:00-20:30
Results: No owls heard.
Habitat Assessment: This meadow is rather unique. It harbors one of the largest stands of willow I have ever seen in the Sierra. The habitat seems good for Willow Flycatchers, however I saw only one bird here during my visit. Cattle are fenced out, but a few horses are allowed to graze in late summer. There is only about 22 acres of grass in this meadow, over 27% of the meadow is willow. This habitat is marginal for Great Gray Owls. The snag count is low, but there is a large stand of aspen in the NE end of the meadow that could provide habitat for nesting Goshawks. If the California population of Great Gray Owls utilize abandoned hawk nests for breeding sites, the Goshawk would be most likely nest donor.
Habitat Score: 24

Meadow Name: Coyote Meadow
District: Summit
Date of Survey: 11 Aug 1982
Calling Effort: (8/11) 19:51-23:00
Results: No owls heard here (also called in Upper 3 Meadows)
Weather: Clear, no wind, no moon.
Habitat Assessment: This meadow has too much willow (21%) and Corn Lily (13%) in it to be considered as potential Great Gray Owl habitat. The snag count was high in spite of the rather high elevation (8500 ft.). This area is used a good deal by recreationists.
Habitat Score: 36

Meadow Name: Eagle Meadow
District: Summit
Date of Survey: 14 Aug 1982
Calling Effort: (8/13) 19:00-23:00, 8/14) 20:00-23:00
Results: a Great Horned Owl was heard in the SW part of the meadow at 20:46 on 8/13. No other owls heard.
Habitat Assessment: This meadow is rather large and has a good deal of sage, willow, Corn Lily and Mule Ears, but there is at least 50 acres of the area that is grassy, particularly the southwestern part of the meadow. Most of the meadow is not good Microtus habitat, but pocket gophers are common enough in well drained soils. The snag count is rather low and the area is heavily used by recreationists (hunters, fishermen and campers). It is also being grazed. I would consider the meadow as marginal for Great Gray Owls, but I would not be surprised if a bird was reported from the area. I noted a family of two adult and three young Goshawks just northeast of the meadow. This meadow harbors good Willow Flycatcher habitat as well.
Habitat Score: 20

Meadow Name: Long Valley Creek
District: Summit
Date of Survey: 26 Aug 1982
Calling Effort: (8/25) 19:00-22:00, (8/26) 19:00-22:00
Weather: Windy, clear and moon about half-full.
Results: No owls heard.
Habitat Assessment: This is not Gray Gray Owl habitat. The area is largely covered by Mule Ears, sage, and willow and is atypical of the habitat used by these owls in the Sierra. I noted one adult Goshawk in the area and observed a Willow Flycatcher along the creek.
Habitat Score: 24

Meadow Name: Red Rock Meadow
District: Summit
Date of Survey: 27 Aug 1982
Calling Effort: (8/26) 20:00-21:45, (8/27) 20:00-23:00 (slept in the meadow both nights)
Weather: Clear, no moon, no wind.
Results: Two Great Horned Owls calling at 20:15 on 8/26.
Habitat Assessment: This meadow, by itself, is too small to support Great Gray Owl breeding, but if utilized with Sardine Meadow the habitat is very good. The snag count is low but it is more than adequate around Sardine Meadow. There does not appear to be any significant grazing pressure and in general the meadow is in excellent condition. Over 20% of the meadow is sage, however.
Habitat Score: 20

Meadow Name: Sardine Meadow
District: Summit
Date of Survey: 27 Aug 1982
Calling Effort: (8/26) 20:00-21:45, (8/27) 20:00-23:00 (slept in the meadow both nights)
Weather: Clear, no moon, no wind, temp 42° F.
Results: One Long-eared Owl in the NE corner of the meadow at 20:20. No other owls heard.
Habitat Assessment: This meadow has very good potential for Great Gray Owls. The snag count is high and it is large enough to support a breeding pair. Disturbance appears minimal. This meadow, when used in conjunction with Red Rock Meadow, would increase the foraging area for a pair of Great Gray Owls. When these meadows are considered together, the habitat is excellent.
Habitat Score: 40

Meadow Name: Lower 3 Meadows
District: Summit
Date of Survey: 12 Aug 1982
Calling Effort: (8/12) 21:38-23:10
Weather: Clear, no moon, no wind.
Results: No owls heard.
Habitat Assessment: See Upper 3 Meadows.

Meadow Name: Middle 3 Meadows
District: Summit
Date of Survey: 12 Aug 1982
Calling Effort: (8/12) 20:11-21:38
Weather: Clear, no moon, no wind.
Results: One Great Horned Owl calling on the SW side of the meadow at 20:25.
Habitat Assessment: See Upper 3 Meadows.

Meadow Name: Upper 3 Meadows
District: Summit
Date of Survey: 11 Aug 1982
Calling Effort: (8/11) 19:51-23:00
Weather: Clear, no moon, no wind.
Results: No owls heard.
Habitat Assessment: When the meadows in this complex are taken individually they are not large enough to support Great Gray Owl breeding. However, if taken collectively the meadow area is approximately 37 acres. Of this total approximately 22 acres are either bare ground or Corn Lilies. There is actually very little viable Microtus habitat in these meadows. The snag counts, on the other hand, are rather good in all three of the meadows. Grazing has been eliminated in the area and the wisdom of this decision is apparent when one sees how delicate the substrate is.
Habitat Score for the 3 Meadows System: 40

Meadow Name: Hazel Green
District: Summit
Date of Survey: 17-18 Aug 1982
Calling Effort: (7/17) 18:00-24:30
Weather: Clear, no moon, no wind.
Results: No owls heard, but several Great Horned Owl feathers were found on the south side of the meadow.
Habitat Assessment: This meadow is too small to be considered seriously as suitable habitat for Great Gray Owls. It is overgrazed as well. I noted about 25 head of cattle grazing the Meadow. Overgrazing would undoubtedly limit a healthy microtine population from utilizing the meadow.
Habitat Score: 28

Meadow Name: Wilson Meadow
District: Groveland
Date of Survey: 19 July 1982
Calling Effort: (7/18) 20:00-23:30, (7/19) 18:30-21:30
Weather: Calm, clear and humid, no moon.
Results: A family of Saw-whet Owls were found in the upper Wilson Meadow system at 20:57 on 7/19. I saw two juveniles and one adult bird.
Habitat Assessment: When Great Gray Owls bred here last year I was amazed. When I saw the habitat I would never have guessed that these owls would use such a meadow. The snag count is poor (in the upper system at least), but it is possible that they may have nested in the lower meadow. There are more large snags in that area. I consider the breeding success noted here in 1981 as exceptional. I am not sure whether the fact that the birds bred here reflects some incorrect assumptions about habitat suitability or whether it was just an exceptional event not likely to happen again.
Habitat Score: 32

Meadow Name: Wolfin Meadow
District: Groveland
Date of Survey: 20 July 1982
Calling Effort: (7/20) 13:30-23:30, (7/22) 18:00-19:00
Weather: Clear, no moon, no wind, warm.
Results: One Spotted Owl 200 yards north of the north end of the meadow at 20:56 on 7/20.
Habitat Assessment: This meadow is too small for Great Gray Owls. It was being grazed by about 20 head of cattle during my visit. The meadow is rather steep (14% slope) and would be subject to erosion in the event of overgrazing. The area appears to be heavily hunted in the fall. I saw a number of expended rifle shells around the buildings in the south end of the meadow. This meadow would be of interest only to a transient Great Gray Owl.
Habitat Score: 20

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TABLE 1.

A summary of the Great Gray Owl habitat survey, numbers and species found, and habitat scores.

District & Meadow Name	Acres	Date	Hours of Calling	Results	Snags > 24"/ Acre	Meadow Size	Grazing	Area of Non-Grass Veg.	Total Score
Mi-wok District									
Bourland	47	8/24/82	6.5	NEG	12	12	12	12	48
Clavey	21	8/5/82	7.5	GHO(1)	8	8	4	4	24
Hess	39	7/28/82	6.5	PO(1)					
				SCO(1)	4	12	4	12	32
Lee Price	76	8/6/82							
		8/9/82	8	NEG	0	12	12	12	36
Rushing	30	7/23/82		LEO(1)					
		7/29/82	6		4	12	8	8	32
Thompson	20	7/21/82	7.5	NEG	4	8	12	12	36
Calaveras District									
Big Meadow Creek	20	8/16/82	6	LEO(1)	8	8	4	0	20
Gabbot	43	9/2/82	6	PO(1)	12	12	4	8	36
Gardner	18	8/19/82	6	NEG	8	4	4	12	28
Stanislaus	70	8/28/82	7.5	GHO(2)	12	12	12	12	48
Summit District									
Bell (Lower)	17	8/2/82	1.5	NEG	4	4	12	8	28
Bell (Main)	18	7/30/82							
		8/3/82	1.5	NEG	4	4	12	8	28
Bell (Middle)	22	8/2/82	2.3	GHO(1)	0	12	8	12	32
Bell (Upper)	42	8/3/82	1.5	GHO(1)	4	12	12	0	24
Coyote	50	8/11/82	3.1	NEG	12	12	12	0	36
Eagle	133	8/14/82	6	GHO(1)	4	12	4	0	20
Long Valley Cr.	21	8/26/82	6	NEG	4	8	12	0	24
Red Rock	14	8/27/82	4.5	NEG	4	4	12	0	20
Sardine	38	8/27/82	4.5	LEO(1)	12	12	12	4	40
Lower 3 Meadows	7	8/12/82	1.7	NEG	8	0	12	8	28
Middle 3 Meadows	15	8/12/82	1.3	NEG	12	4	12	0	28
Upper 3 Meadows	15	8/11/82	3.5	NEG	12	4	12	4	32
Groveland District									
Hazel Green	23	7/18/82	6.3	GHO(1)	4	8	4	12	28
Wilson	21	7/19/82	6.3	SWO(3)	0	8	12	12	32
Wolfin	10	7/20/82	6	SO(1)	4	0	4	12	20

Species Codes:

GHO =	Great Horned Owl	SCO =	Screech Owl
LEO =	Long-eared Owl	SO =	Spotted Owl
PO =	Pygmy Owl	SWO =	Saw-whet Owl
NEG =	Negative		

TABLE 1 (continued)

Number of Meadows Surveyed	=	25
Total Acres	=	830
Total Hours Calling	=	123.5
Number of Owls Found	=	17
Number of Species	=	6
Great Horned Owl	=	7
Long-eared Owl	=	3
Pygmy Owl	=	2
Screech Owl	=	1
Spotted Owl	=	1
Saw-whet Owl	=	3
$\bar{X}$ Habitat Score	=	30.4
S.D.	=	7.7
Range	=	20 - 48

APPENDIX A

Meadow habitat assessment form used on the survey.

FOR | DISTRICT | COMPARTMENT | TOWNSHIP | RANGE | SECTION | ¼ SECTION | STAND # | MNR | QUAD # | AERIAL PHOTO # | AERIAL PHOTO YR. | DATE/OBSERVER | ASPECT | SLOPE | SLOPE OF CHANNEL BOTTOM | AREA | DRAINAGE BASIN AREA | ELEVATION | % WET MEADOW | STABILITY | ALLOTMENT | MEADOW NAME

EDGE

Length (ft x 100) ÷ 43560 = ac.

Type	% of length
S.S.2	
S.S.3	B C Tot.
S.S.4	B C Tot.

SNAGS	#total	# per acre
10-23" dbh		
24" dbh		

DOMINANT SPECIES IN COVER CLASSES

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OPEN MEADOW

TYPE	WET[3] # SPP	WET # HITS	WET %	DRY # SPP	DRY # HITS	DRY %	TOTAL # SPP	TOTAL # HITS	
1. grass/forb. ≤ 12"									
2. grass/forb. > 12"									
3. shrub < 3'									
4. shrub ≥ 3'									
5. hardwood									
6. conifer									
7.									
8.									
9.									
10.									
11. litter	X			X			X		
12. bare ground									
13. pavement (1/8"-3")	X			X			X		
14. rock (> 3")									
15. moss and lichens	X			X			X		
TOTAL			100			100			100
gopher activity	X			X			X		
microtine activity	X			X			X		
tot. sm. mammal plots	X		100	X		100	X		100

SNAG NUMBERS

24" dbh	10-24"	TOTAL

SOIL DAMAGE RATING

severe	moderate	light

GULLIES

Y	N

ROADS

within 50'	50-100'	100-200'

GULLY CROSS SECTION

CATTLE USE

	N

RECREATION

campground within 100'		dispersed camping from vehicles within 100 feet		hiking trail within 50 feet	

hiking trail 50-100'

walk-in camping		no apparent use	

WILDLIFE OBSERVATIONS (including signs)

REMARKS

SKETCH MAP

SNAG SAMPLE PLOTS

100-600' from meadow perimeter; take circular plots 37.5' radius (0.1 acre

plot	# of snags 10-23" dbh	# of snags ≥ 24" dbh
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total		

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NOTES

1. Edge: a 100' strip extending from meadow perimeter into adjacent timber/shrub area. This is the area in which complete snag counts will be made. If snag density in this strip is less than 3 snags per acre, take 10 snag plots in strip 100-600' from perimeter.

2. Wet meadow: water table less than 45" deep through mid-July.

3. Seral stages: 2--shrubs, small trees 3-20 ft. high; 3--trees 10-20.9" dbh; 4--trees ≥ 21" dbh. Refers to dominant vegetation.

4. Canopy closure: B--40-69%; C--70-100%.

5. Small mammal plot: circular plot, 5.9' radius (1/400 acre). Take every 5 paces. Count a hit if there is gopher activity or microtine runway in plot.

6. Soil damage rating: severe--strongly compacted or abnormally disturbed over much of the area; moderate--moderately compacted or disturbed with only minor extent strongly compacted; light--soil friable, porous, good humus content, with little if any compaction.